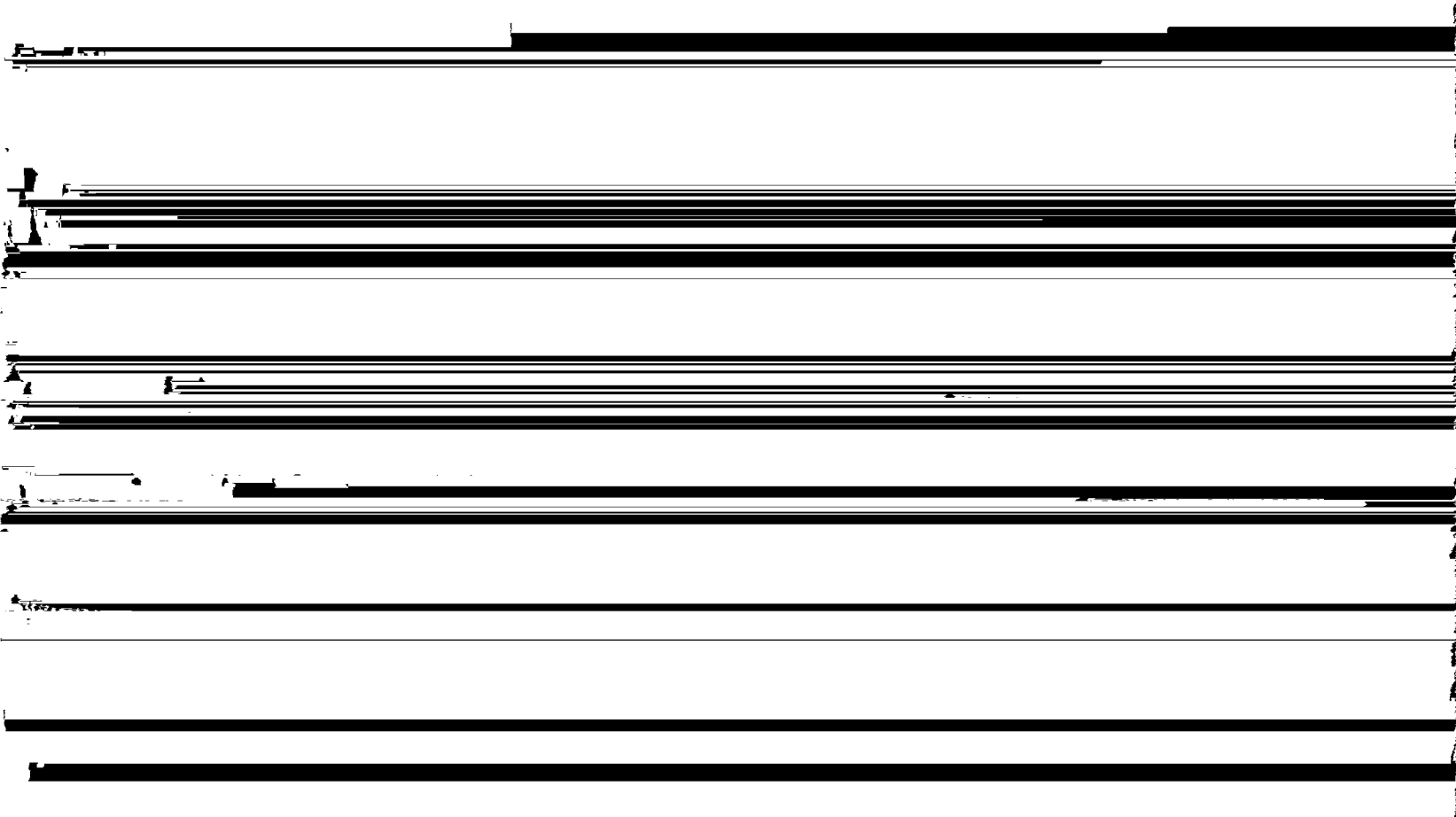
of the vertically-integrated programmer to switch subscribers from the alternative distribution system to its own commonly-owned cable systems in order to obtain the programmer's program services. This ability is dependent upon the degree of geographical overlap in service areas of the cable systems and the alternative distributors. If an alternative distribution system services an entirely different geographical area from that served by the vertically-integrated cable system, there is no potential for attracting new subscribers to the cable system from such an alternative distributor. Therefore, in the absence of collusion, there is no benefit from engaging in anticompetitive behavior. If the overlap is small, incentives for anticompetitive behavior are also small, especially since it is not practical for a program service to charge one license fee



arrange for SMATV service in lieu of providing the local cable operator access to the building. Thus, few, if any, incremental subscribers to the cable system could result from anticompetitive behavior against SMATV operators. By way of further example, consider TVRO distribution (which is an alternative distribution technology typically used in rural areas). A large percentage of subscribers choose this technology because cable service is Not available in their area. Thus, few, if any, incremental subscribers to cable could result from anticompetitive behavior against TVRO distributors. As a result, it would generally make little economic sense for a vertically-integrated program service to discriminate against a TVRO distributor which has only limited overlap with the program service's commonly-owned cable systems. Too much revenue would be lost to non-owned distribution systems

price increase for such a service or the denial of such a service to any given distribution medium would induce, consumers switch from another service on the given system rather than switching to another distribution medium to follow the particular program service. Similarly, if the program service is very specialized, it is likely to be attractive to only a small number of subscribers on any particular distribution system, and, therefore, it is unlikely that anticompetitive behavior will cause many subscribers to switch in sufficient numbers to make such a strategy profitable.

Programming that involves the payment of large rights fees is also a poor candidate for anticompetitive pricing or denial of availability. For example, premium services such as HBO and Showtime that exhibit recently released movies pay very substantial rights fees to movie studios and others when acquiring product. As a result, profitability is extremely sensitive to and dependent upon the number of subscribers to the

systems of its services in an attempt to reduce its per-subscriber programming costs.

In the next section, we demonstrate through the use of a simple economic model that it is actually economically harmful

subscribers to the service to deny access to that service to alternative technology distributors.

The profitability of discrimination turns importantly on the importance of the vertically-integrated firm's program service(s) to a subscriber's decision to switch from one technology to another, the size of the firm's cable system subscriber base, and the relative profitability of commonly-owned cable systems to program services. Our analysis demonstrates that cable ownership far in excess of that contemplated by Viacom's proposal is needed to make discrimination profitable even if the firm owns a number of networks that are important to subscribers.

There are few studies of the sensitivity of cable subscription to the number of available program networks (i.e., the importance of a program service to a consumer's decision to subscribe to a particular distributor). A recent study suggests that, in general, an increase in the number of cable networks increases cable penetration by 0.6 times that increase.[2] Thus, if the number of cable networks increases by 5 percent -- say, from 20 to 21 -- the number of subscribers would increase by 3 percent. The number of cable networks is very large. Paul Kagan Associates lists 28 "major" basic cable networks and seven

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[2] Robert W. Crandall, "Elasticity of Demand for Cable Service and the Effect of Broadcast Signals on Cable Prices," Report prepared for TCI in Mass Media Docket 90-4. See also J. W. Mayo and Y. Otsuke, "Demand, Pricing and Regulation: Evidence from the Cable Television Industry," The RAND Journal of Economics, Autumn 1991, pp. 396-410. Of course, the percentage may change to some extent depending on the popularity of a particular service.

national premium networks, but there are many more national and regional networks, particularly regional sports networks. Thus the denial of any one program service or group of program services to a non-cable distributor is unlikely to cause very many viewers to shift from the non-cable distributor to the cable system with access to that programming.

In the analysis that follows, we assume the ultimate form of discrimination -- denial of the program service.[3] We also assume[4] that the incremental profit from cable television service per subscriber is $193 per year, the incremental profit per subscriber for premium cable networks is $58 per year and the incremental profit per basic-cable subscriber is $3.30 per year. In the table that follows, we show the effect of different assumptions concerning the relative size of the integrated network's share of downstream cable subscribers.

We provide calculations of the profitability of discrimination under the assumption that denial of an integrated network's program service could shift 10 percent, 20 percent, 30

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[3] This is the strongest possible assumption. If the goal of discrimination is to shift subscribers to the integrated network's cable systems, denial of the network service to non-cable media is likely to be the most effective approach. Indeed, a small price increase to an alternative media system, where the network was one of 20 to 40 on the system, is unlikely to cause measurable viewer switching.

[4] These assumptions are explained in the attached Appendix. They reflect approximations that cable networks' additional revenues per subscriber flow through entirely to profits and that the incremental cost of cable-television service per subscriber is equal to 45 percent of revenues.

percent, or 50 percent of subscribers, even though it is unlikely that any integrated network controls sufficient programming to effect a 30 percent shift.[5] We also show the effects of ownership of vertically-integrated network under the assumption that the integrated firm owns cable systems that reach 5 percent, 10 percent, 25 percent, 50 percent, 75 percent, and 100 percent of households in the alternative distributor's market.

TABLE 1[6]

Potential Discriminatory Profit
Per Dollar of Non-cable Programming Revenue Lost

Share of Cable Subscribers Controlled By Integrated Network	Share of Noncable Shifted to Cable			
	10%	20%	30%	50%
5%	-$0.96	-$0.92	-$0.89	-$0.81
10%	-$0.92	-$0.85	-$0.77	-$0.62
25%	-$0.81	-$0.62	-$0.43	-$0.05
50%	-$0.62	-$0.24	$0.14	$0.90
75%	-$0.43	$0.14	$0.71	$1.85
100%	-$0.24	$0.52	$1.28	$2.80

Note: Assumes one premium network plus three basic networks.

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[5] Given the results in Crandall, op.cit., the network would have to control one-half of all programming, basic and premium. At present, no integrated firm controls this large a share of cable programming.

[6] Calculations in Table 1 reflect gains and losses from sacrificing $1.00 of network revenues on the non-cable medium. For instance, the $.89 loss referred to in the text reflects an $.11 gain in profit on the network's cable systems less $1.00 loss of non-cable revenues.

The calculations in Table 1 are based on an integrated network with one premium service that attracts one-third of subscribers on either a cable or non-cable distribution system at a net profit of $58 per subscriber per year to the network plus three basic networks that net $9.90 per subscriber per year in incremental profit.

The results in Table 1 show that discrimination cannot be profitable when the level of commonly-owned cable systems is at the level proposed by Viacom.

It is clear from these results that no integrated program service whose commonly-owned cable systems account for fewer than 5 percent of the total subscribers to that service could profitably discriminate against national non-cable media, such as TVRO distributors or potential DBS systems. If such a service, for example, shifted 30 percent of subscribers to cable, it would suffer a net loss of $.89 for every dollar shifted from the non-cable medium, according to Table 1. In the case of denial of the program services to all MMDS, for example, with approximately 320,000 subscribers nationwide, the program services' revenues would drop by about $9.4 million but incremental profit to the cable system would increase by only about $1 million. Thus, by discriminating against MMDS, the vertically-integrated programmer would end up reducing its profit by about $8.3 million.

Even if the network could shift all of these non-cable media's subscribers to cable -- obviously an extreme assumption given the availability of broadcast stations, superstations and

other cable programming -- the vertically-integrated program service would have to control systems with more than 13 percent of all of the country's cable households. This is far in excess of the level of subscribers permitted under Viacom's proposal.

In some media, such as SMATV or TVRO, it is extremely difficult to induce a particular subscriber to switch is extremely difficult, since that subscriber generally does not have the ability to gain access to cable. Even looking at the regional or metropolitan-area level, the possibility for profitable discrimination is limited. It is, however, conceivable that a vertically-integrated service could structure

DMA,[7] Viacom would fail to recover about 29 cents of every dollar of MMDS network revenues lost even if its programming were so attractive as to allow it to shift 30 percent of MMDS subscribers to cable through discrimination.

In short, a program service whose commonly-owned cable systems account for fewer than 5 percent of the total subscribers to that program service is simply too reliant on non-cable subscribership percentage of its subscriber-base to engage in profitable discrimination against non-cable distribution media. Establishing a de minimus exemption from the program access rules for networks whose commonly-owned cable systems account for fewer than 5 percent of the subscriber base of that network would pose no threat to competition.

III. Other Negative Effects of the lack of a De Minimis Exemption

Adopting a per se rule which applies the program access rules to all vertically-integrated program services, no matter the extent or degree of its vertical integration, is a waste of public and private resources. As demonstrated in Section II above, those entities with a low level of vertical integration have, like non-integrated program services, no economic incentive to engage in anticompetitive behavior against alternative distributors. Furthermore, the failure to provide a de minimis

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[7] We have no information on MMDS coverage. It is our understanding that many MMDS systems have the potential to cover

exemption is likely to have at least two additional negative results, both of which are in direct conflict with the purpose of the Act: (1) increasing the concentration of cable ownership and (2) erecting additional barriers to entry to the creation of new program services.

First, since we can expect the level of regulatory and litigation costs associated with the program access rules to be generally similar for all vertically-integrated entities regardless of the level of integration, lack of a de minimis exemption would tend to penalize and unduly burden those entities with low levels of integration. Furthermore, if regulatory costs incurred by a program service with de minimis vertical integration begin to significantly cut into its profits, this program service would be forced to consider divestiture of its cable system since: (1) all program service license fees payable to vertically-integrated program services would be subject to regulatory scrutiny, (2) fixed regulatory costs are likely to be substantial relative to cable system profits where the level of cable system ownership is small, (3) substantial regulatory costs could be avoided through divestiture, and (4) higher returns would be available through redeployment of the proceeds derived from such divestitures to alternative investments. The most likely purchasers of the divested cable systems would be the large cable MSOs [to the extent that such entities would be permitted to expand] which would be in a more advantageous position (on a cost-per-subscriber basis) to absorb the new

regulatory costs. Presumably, the Commission and Congress would not be favorably disposed to further increases in the concentration of cable system ownership. Indeed, if concentration rose, the incentives and ability to engage in collusion and to undermine alternative distribution technologies would likely increase as well.[8] In any event, it is doubtful that the public interest would be served by increasing the threat of anticompetitive behavior without obtaining any benefits from deterring such behavior.

Second, the lack of a de minimis exemption would tend to erect barriers to entry into the creation of program services. There are four commercial television networks and fewer than ten major movie production companies in the United States today. In fact, since at least the 1950s, public officials have expressed concern about the small number of sources of creative material for the theater and television markets. Partly in response to the need for important sources of creative material, program services like Showtime and Nickelodeon have become a very common source of program development. In addition, upstream integration

Failure to establish a de minimis exemption would create a further disincentive for entry into programming by cable companies as the additional regulatory costs would be added on top of other costs of entry. Entry on a small scale, the most common type of entry, would be especially deterred when entry is on a small scale. Moreover, the probability of success of new entry into programming would be reduced if most new entrants would be from non-cable sources who lack the benefits provided by participation in cable operations. The ownership of cable systems provides a test bed for the product allowing the producer/owner to closely monitor the market, assess consumer responses to its programming and experiment with alternative formats, scheduling differences and the like. This integration reduces the risks inherent in the creation of new programming, thereby increasing the probability of success in an otherwise high-risk endeavor. Non-vertically-integrated new-entrant programmers would be denied these efficiency-promoting and risk-reducing relationships unless they were willing to accept potentially severe regulatory restraints.

IV. CONCLUSION

We support Viacom's proposed de minimis exemption to the program access rules of the Act for any program service that is under common ownership with cable systems that account for fewer than five percent of the subscribers to the program service. Our research suggests that failure to provide relief for vertically-

integrated program services that fall below the five percent threshold portends serious potential economic consequences. Adverse effects of the failure to adopt a de minimis exemption include:

1. Excessive costs of regulation in both the public and private sectors.
2. Increased costs of providing programming and program services.
3. Increased concentration of cable ownership.
4. Reduced entry into programming and greater risks associated with attempting entry.

Our economic analysis suggests that the Commission confine its enforcement to areas where there are potential benefits from enforcement and forego enforcement where no credible competitive threat exists. It would be unfortunate if regulation of behavior

of vertically-integrated program services increased rather than reduced costs to American consumers.

Respectfully submitted,

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APPENDIX

The model in Section II is derived from optimizing conditions for a vertically-integrated program network. Specifically, it is assumed that the network will not sell its programming to noncable media -- i.e., it will discriminate against such media totally -- if the loss in profits from such media is offset by the gain in profits on the network's own cable system:

(1)

$$-\Delta\Pi_p \prec \Delta\Pi_c$$

where $-\Delta\Pi_p$ is the value of lost network profits from refusing to sell its programming services to noncable outlets and $\Delta\Pi_c$ is the value of changes in network profits from diverting subscribers from the noncable media to its cable systems.

The profits lost from discriminating against the noncable media may be written as:

(2)

$$-\Delta\Pi_p = -m * a * \Pi_p * H$$

where H is the number of households in the non-cable medium's area(s) of operation, m is the share of these households that subscribe to this noncable outlet, a is the share of these subscribers that would be reached by the integrated network's programming, and Π_p is the incremental profit per subscriber to

the integrated program network from selling this network service through this noncable medium. If the network in question is a basic network a is equal to one since every subscriber to the noncable medium would receive it. If, however, the program network is a premium service, a would represent the share of subscribers electing to take the premium network channel.

The profits gained from discrimination may be written as:

(3)
$$\Delta\Pi_c = \left[c*\Pi_c + c*a\Pi_p\right] * H$$

where c is the share of the H households that the integrated network attracts to its commonly-owned cable systems by refusing to offer its cable networks to the noncable medium and Π_c is the incremental profit per subscriber to its cable systems.

Setting (2) equal to (3) and manipulating the results provides the following condition for successful discrimination:

(4)
$$\frac{\Pi_c}{\Pi_p} > \frac{a(m-c)}{c}$$

Not surprisingly, profitable discrimination rises with the marginal profit per cable subscriber (Π_c), but falls with the marginal profit per network subscriber on alternate (and cable) media Π_p. Moreover, the profitability of discrimination

increases with c/m, the share of the alternate medium's subscribers attracted to the network's cable systems. A more convenient way of expressing (4) is:

(4′) $$\frac{c}{m}\left[\frac{\Pi_c + a\Pi_p}{a\Pi_p}\right] > 1$$

This says that profitability of discrimination requires that the profits on the integrated network's cable system per dollar of profit lost through discrimination must be more than one.

To calibrate (4′), we need information on c/m, a, Π_c, and Π_p. For basic networks, a is equal to unity, but for premium networks the data exhibit substantial variance. The market penetration for the three major premium channels, HBO, Showtime, and Disney, ranges from 17.2 percent to 41.9 percent.[1] We use one-third as the "typical" value of a for premium service. We calculate that cable systems' incremental profit per subscriber, Π_c is equal to 55.5 percent of average revenue per subscriber. This assumes that cable systems face an average price elasticity of demand of

[1] Paul Kagan Associates, The Pay TV Newsletter, January 31, 1993.

-1.8. Given average revenues per subscriber of $340 per year in 1992, Π_c is estimated to be equal to 193.[2]

Finally, the incremental profitability of cable networks is assumed to be equal to the average revenue per subscriber because incremental program revenues from subscribers in each medium flow through to profits unless the cable network's programming contracts require payments to program suppliers that are tied to the number of subscribers. Kagan data suggest that revenues per subscriber average about $58 for premium networks and about $3.30 for the larger basic cable networks.[3]

Given these assumptions, the profitability of discrimination turns on the share of the noncable medium's subscribers shifting to cable as a result of discrimination, cm, and the share of these cable subscribers attracted to the integrated network's commonly-owned cable systems. Alternative values of these variables are shown on the horizontal and vertical axes of the table in the text. Entries in the table that exceed one reflect profitable discrimination.

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[2] See Crandall, op.cit., for estimates of the price elasticity of demand for cable television. The average cable revenues per subscriber, including basic and expanded basic, was just over $340 in 1992. (Paul Kagan Associates, The Kagan Index, March 30, 1993.)

[3] Paul Kagan Associates, Cable TV Programming, January 29, 1993 and February 25, 1993; The Pay TV Newsletter, January 31, 1993 and April 30, 1993.